SEISMIC HAZARD INVESTIGATIONS IN PUGET SOUND (SHIPS): ANALYSIS OF SEISMIC STRUCTURE DATA ACQUIRED IN A COOPERATIVE SURVEY BY U.S. GEOL. SURVEY, GEOL. SURV. CANADA, AND SIX UNIVERSITIES

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Investigations Undertaken

Abstract A major marine seismic investigation in Puget Sound, Strait of Juan de Fuca and Strait of Georgia was conducted in 1998, led by the United States Geological Survey (USGS) and involving the Geological Survey of Canada and six U.S. and Canadian universities (SHIPS - Seismic Hazard Investigations in Puget Sound). This NEHRP funding is to provide partial support for analyses of seismic reflection and refraction data, primarily from Strait of Juan de Fuca, Strait of Georgia and adjacent regions, and interpretation in terms of seismic hazard in the region. Three studies are summarized in this report, (a) Two studies of tomographic analysis of SHIPS wide angle data for the upper 15 km structure, especially sedimentary basins in the region. The study area extends from northern Puget Sound to Georgia Strait, and from N. Olympic Peninsula to S. Vancouver Island, (b) Mapping the deep structure, including the downgoing oceanic plate, beneath the Strait of Juan de Fuca using SHIPS land-based recording mainly on S. Vancouver Island, (c) The SHIPS shallow MCS seismic sections and associations with recent earthquakes, especially in southern Strait of Georgia.

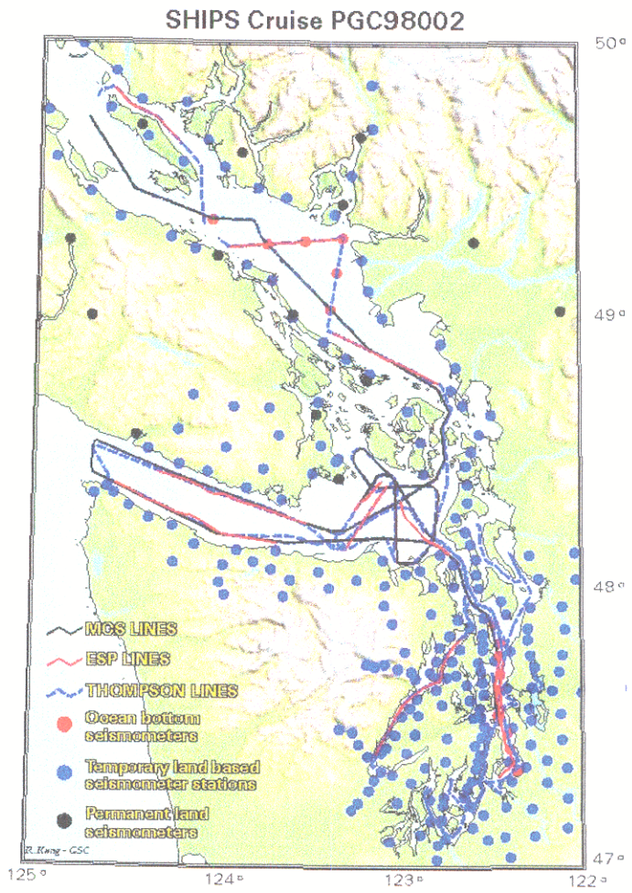

Figure 1. Locations of SHIPS multichannel lines, ocean bottom seismographs, and land recording stations.